#3

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CLIENT Ref. # BTGI-0025

IN THE UNITED STATES RECEIVING OFFICE
Before the United States Receiving Office
for the Patent Cooperation Treaty

In re application of: Crisanto GUTIERREZ-ARMENTA and Elena RAMIREZ-PARRA, et al.

U.S. Serial No.:

International Application No.: PCT/EP00/09325

International Filing Date: 25 September 2000 (25.09.2000)

For: WHEAT DP PROTEINS AND USES THEREOF

Assistant Commissioner for Patents
BOX PCT DO/EO/US
Washington, DC 20231

TRANSMITTAL LETTER SUBMITTING SEQUENCE LISTING

Applicant submits herewith the Sequence Listing in written (11 sheets) and computer readable form (1 diskette), the contents of which are the same.

The enclosed Sequence Listing does not go beyond the disclosure in the international application as filed.

Respectfully submitted,

Paul K. Legaard
Registration No. 38,534

/lw

Enc.: 1 Diskette ; 11 sheets sequence listing

Date: 22 March 2002

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SEQUENCE LISTING

<110> Gutierrez-Armenta, Crisanto
Ramirez-Parra, Elena

<120> Wheat DP Proteins And Uses Thereof

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<150> P9902127
<151> 1999-09-24

<150> PCT/EP00/09325
<151> 2000-09-25

<150> P9902474
<151> 1999-11-11

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ggg gct gtt gac ccg gat aaa gat agg aag aag gag aag gct gcg gca      196
Gly Ala Val Asp Pro Asp Lys Asp Arg Lys Lys Glu Lys Ala Ala Ala
    45                  50                  55

ccg agg atc acc ggt tgg ggg ctc cgc gag tac agc aaa ata gtt tgt      244
Pro Arg Ile Thr Gly Trp Gly Leu Arg Glu Tyr Ser Lys Ile Val Cys
60                  65                  70                  75

gag aaa gtt gaa gcc aaa gga aga aca aca tac aat gag gtt gca gac      292
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                80                  85                  90

gaa att tat tca gag ctg aag tcc atg gca cat att ggt caa ggg ttt      340
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            95                  100                 105

gat gag aag aat att agg cgg aga gtg tat gat gct ttc aac gtt ctc      388
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        110                 115                 120

att gca ctt cgt gtt att gca aaa gaa aaa aag gag ata cgg tgg atg      436
Ile Ala Leu Arg Val Ile Ala Lys Glu Lys Lys Glu Ile Arg Trp Met
    125                 130                 135

ggc ctt tca aat tac aga tat gaa aaa ata aag aag ctt gag gaa gtt      484
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140                 145                 150                 155
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gaa atc gaa aaa cag ttt gat gat ctc caa aac atc aag tta cgt aac      580
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            175                 180                 185

caa aca ctg gaa agc tca gca gag aat gtt aat ggc atc cgc ctt cca      628
Gln Thr Leu Glu Ser Ser Ala Glu Asn Val Asn Gly Ile Arg Leu Pro
        190                 195                 200

ttc gta ttg gtc aag aca tct agg aaa gca agg gtg gaa att gag att      676
Phe Val Leu Val Lys Thr Ser Arg Lys Ala Arg Val Glu Ile Glu Ile
    205                 210                 215

tca gat gac tcg aag ttt gcc cat ttc gag ttc aat ggt gca cca ttc      724
Ser Asp Asp Ser Lys Phe Ala His Phe Glu Phe Asn Gly Ala Pro Phe
220                 225                 230                 235

aca ttg cat gat gat ctc tca atc ctt gag ggg gta agg cgt aac agc      772
Thr Leu His Asp Asp Leu Ser Ile Leu Glu Gly Val Arg Arg Asn Ser
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ata gga aga gct ggc cgc gcc acc ctt cac tagagactca agaatattac        822
Ile Gly Arg Ala Gly Arg Ala Thr Leu His
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tatatatcct catgaaaact tgacctagtt tataggacag tctctcaggc ttgagaagat    942

tttaacctgc aaattttgtc tccttttttgt gcctagcagg ttattaggtc tcagatagat   1002

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            20                  25                  30

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        35                  40                  45

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    50                  55                  60

Trp Gly Leu Arg Glu Tyr Ser Lys Ile Val Cys Glu Lys Val Glu Ala
65                  70                  75                  80

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                85                  90                  95

Leu Lys Ser Met Ala His Ile Gly Gln Gly Phe Asp Glu Lys Asn Ile
            100                 105                 110
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115 120 125

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130 135 140

Arg Tyr Glu Lys Ile Lys Lys Leu Glu Glu Val Arg Lys Glu Leu Val
145 150 155 160

Asn Lys Ile Arg Asn Lys Lys Ala Leu Leu Gln Glu Ile Glu Lys Gln
165 170 175

Phe Asp Asp Leu Gln Asn Ile Lys Leu Arg Asn Gln Thr Leu Glu Ser
180 185 190

Ser Ala Glu Asn Val Asn Gly Ile Arg Leu Pro Phe Val Leu Val Lys
195 200 205

Thr Ser Arg Lys Ala Arg Val Glu Ile Glu Ile Ser Asp Asp Ser Lys
210 215 220

Phe Ala His Phe Glu Phe Asn Gly Ala Pro Phe Thr Leu His Asp Asp
225 230 235 240

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ccgggagtcg ggggtcccgc agcgcgcgat cgcgagatcg ggctt atg tct ggg ggc 177
Met Ser Gly Gly
1

ggc agg ccg ccg gct gcg caa aaa atc ctg cag tct ctg cgc ccg ccc 225
Gly Arg Pro Pro Ala Ala Gln Lys Ile Leu Gln Ser Leu Arg Pro Pro
5 10 15 20

ccg gtg ttc tcc acg ccg tcg cgg cct ccc ttc gcc tca ccc gac gac 273
Pro Val Phe Ser Thr Pro Ser Arg Pro Pro Phe Ala Ser Pro Asp Asp
25 30 35

tac cac cgc ttt cat gcg ccg act acc cct tct gcc act ggc tcc ggc 321
Tyr His Arg Phe His Ala Pro Thr Thr Pro Ser Ala Thr Gly Ser Gly
40 45 50

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ggc atc ggc tcc ggt ggt gtt ggc ggc gat att gat gag ggg ctt gtt      369
Gly Ile Gly Ser Gly Gly Val Gly Gly Asp Ile Asp Glu Gly Leu Val
        55                  60                  65

atc cgg acg cag cta aaa aga aaa gcc aca cgc gaa gaa aat aat gcg      417
Ile Arg Thr Gln Leu Lys Arg Lys Ala Thr Arg Glu Glu Asn Asn Ala
    70                  75                  80

gct gag tcg agt gac tgt atg att gtc acc act gga gtt act ggc aat      465
Ala Glu Ser Ser Asp Cys Met Ile Val Thr Thr Gly Val Thr Gly Asn
85                  90                  95                  100

ccg cta ctc acc cca gtg tct gga aaa gct gtt aag aat tct aaa tca      513
Pro Leu Leu Thr Pro Val Ser Gly Lys Ala Val Lys Asn Ser Lys Ser
                105                 110                 115

aag act aag aac aat aaa gct ggg cct cag aca cct acg cca aat gtt      561
Lys Thr Lys Asn Asn Lys Ala Gly Pro Gln Thr Pro Thr Pro Asn Val
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ggc tca cca ctc aat cca tca act cct gct ggt act tgc cgc tat gac      609
Gly Ser Pro Leu Asn Pro Ser Thr Pro Ala Gly Thr Cys Arg Tyr Asp
        135                 140                 145

agt tcg tta gga ctt ctg aca aag aag ttc atc aat ttg ctg aag caa      657
Ser Ser Leu Gly Leu Leu Thr Lys Lys Phe Ile Asn Leu Leu Lys Gln
    150                 155                 160

gct gag gat ggc att cta gat ttg aat aat gct gca gaa aca cta gag      705
Ala Glu Asp Gly Ile Leu Asp Leu Asn Asn Ala Ala Glu Thr Leu Glu
165                 170                 175                 180

gtt caa aag cga cgc ata tat gac atc aca aat gtc ctc gaa gga att      753
Val Gln Lys Arg Arg Ile Tyr Asp Ile Thr Asn Val Leu Glu Gly Ile
                185                 190                 195

ggt ctt ata gaa aag aca ctt aaa aac aga att cgt tgg aag ggc ttg      801
Gly Leu Ile Glu Lys Thr Leu Lys Asn Arg Ile Arg Trp Lys Gly Leu
            200                 205                 210

gat gat tca gga gtg gaa tta gat aat ggc ctt tca ggt ttg cag aca      849
Asp Asp Ser Gly Val Glu Leu Asp Asn Gly Leu Ser Gly Leu Gln Thr
        215                 220                 225

gaa gtt gaa aat ctt aat ttg cag gag caa gcc tta gat gag cgt ata      897
Glu Val Glu Asn Leu Asn Leu Gln Glu Gln Ala Leu Asp Glu Arg Ile
    230                 235                 240

agt gat atg cgc gaa aag cta agg ggg tta acg gaa gat gag aac agt      945
Ser Asp Met Arg Glu Lys Leu Arg Gly Leu Thr Glu Asp Glu Asn Ser
245                 250                 255                 260

caa aga tgg ctc tat gtg acg gaa gat gat atc aag gga tta ccc tgc      993
Gln Arg Trp Leu Tyr Val Thr Glu Asp Asp Ile Lys Gly Leu Pro Cys
                265                 270                 275

ttt cag aat gaa act cta att gca ata aaa gct cct cat ggt act aca     1041
Phe Gln Asn Glu Thr Leu Ile Ala Ile Lys Ala Pro His Gly Thr Thr
            280                 285                 290

ctt gaa gta cct gat cct gat gag gct ggt gat tat ctc cag agg aga     1089
Leu Glu Val Pro Asp Pro Asp Glu Ala Gly Asp Tyr Leu Gln Arg Arg
        295                 300                 305

tac aga atc gta tta aga agt acc ctg ggt cca ata gat gtt tac tta     1137
Tyr Arg Ile Val Leu Arg Ser Thr Leu Gly Pro Ile Asp Val Tyr Leu
    310                 315                 320

gtt agt caa ttt gac gat gga ttt gag aat ttg ggt ggt gct gcg aca     1185
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cat gca aca aac gct aca caa agc agc aaa tca atc aat gtg gaa tat      1281
His Ala Thr Asn Ala Thr Gln Ser Ser Lys Ser Ile Asn Val Glu Tyr
            360                 365                 370

aat att cag cac agg cag aat act cca caa gat cct agt tct tca aat      1329
Asn Ile Gln His Arg Gln Asn Thr Pro Gln Asp Pro Ser Ser Ser Asn
        375                 380                 385

gat tat gga ggg atg aca agg ata atc cct tca gat gtt aat act gat      1377
Asp Tyr Gly Gly Met Thr Arg Ile Ile Pro Ser Asp Val Asn Thr Asp
    390                 395                 400

gct gat tac tgg ctc cta aca gag ggt gat gtt agt att act gac atg      1425
Ala Asp Tyr Trp Leu Leu Thr Glu Gly Asp Val Ser Ile Thr Asp Met
405                 410                 415                 420

tgg gaa aca gca cca gaa gtg cag tgg gac acc gct gtg ttt tta cct      1473
Trp Glu Thr Ala Pro Glu Val Gln Trp Asp Thr Ala Val Phe Leu Pro
                425                 430                 435

gaa gat gtt agc atc cca cat gca cat cat agt ccg cgg atg cag gtt      1521
Glu Asp Val Ser Ile Pro His Ala His His Ser Pro Arg Met Gln Val
            440                 445                 450

cca agc atg gat caa cca taaggtcatg gcggtgaaaa cttgacatat             1569
Pro Ser Met Asp Gln Pro
        455

ggaattcctg gagtgctgtt tcagaaaata ctgatttcaa aatggaaaga tcagggcagc    1629

aagttcagac tgatcaccgt tctgaatttg ctgtttgtta tggagacgat tggtgccaac    1689

taacttatca gtctgctgcc ttgtttgttc tggcacctgt ccttcagttg aaaaggcgcc    1749

catgtgcata ttgcaccttg aattcgggct gctatgcaca ttcggtatct gctttatttc    1809

tctaactgag tatattttgc aaggcaatag tggctctgta gctctcttgg gaattaatac    1869

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Ser Pro Asp Asp Tyr His Arg Phe His Ala Pro Thr Thr Pro Ser Ala
        35                  40                  45

Thr Gly Ser Gly Gly Ile Gly Ser Gly Gly Val Gly Gly Asp Ile Asp
    50                  55                  60

Glu Gly Leu Val Ile Arg Thr Gln Leu Lys Arg Lys Ala Thr Arg Glu
65                  70                  75                  80
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85 90 95

Val Thr Gly Asn Pro Leu Leu Thr Pro Val Ser Gly Lys Ala Val Lys
100 105 110

Asn Ser Lys Ser Lys Thr Lys Asn Asn Lys Ala Gly Pro Gln Thr Pro
115 120 125

Thr Pro Asn Val Gly Ser Pro Leu Asn Pro Ser Thr Pro Ala Gly Thr
130 135 140

Cys Arg Tyr Asp Ser Ser Leu Gly Leu Leu Thr Lys Lys Phe Ile Asn
145 150 155 160

Leu Leu Lys Gln Ala Glu Asp Gly Ile Leu Asp Leu Asn Asn Ala Ala
165 170 175

Glu Thr Leu Glu Val Gln Lys Arg Arg Ile Tyr Asp Ile Thr Asn Val
180 185 190

Leu Glu Gly Ile Gly Leu Ile Glu Lys Thr Leu Lys Asn Arg Ile Arg
195 200 205

Trp Lys Gly Leu Asp Asp Ser Gly Val Glu Leu Asp Asn Gly Leu Ser
210 215 220

Gly Leu Gln Thr Glu Val Glu Asn Leu Asn Leu Gln Glu Gln Ala Leu
225 230 235 240

Asp Glu Arg Ile Ser Asp Met Arg Glu Lys Leu Arg Gly Leu Thr Glu
245 250 255

Asp Glu Asn Ser Gln Arg Trp Leu Tyr Val Thr Glu Asp Asp Ile Lys
260 265 270

Gly Leu Pro Cys Phe Gln Asn Glu Thr Leu Ile Ala Ile Lys Ala Pro
275 280 285

His Gly Thr Thr Leu Glu Val Pro Asp Pro Asp Glu Ala Gly Asp Tyr
290 295 300

Leu Gln Arg Arg Tyr Arg Ile Val Leu Arg Ser Thr Leu Gly Pro Ile
305 310 315 320

Asp Val Tyr Leu Val Ser Gln Phe Asp Asp Gly Phe Glu Asn Leu Gly
325 330 335

Gly Ala Ala Thr Pro Pro Arg His Thr Asn Val Pro Lys Pro Gly Pro
340 345 350

Cys Glu Asp Leu His Ala Thr Asn Ala Thr Gln Ser Ser Lys Ser Ile
355 360 365

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Asn Val Glu Tyr Asn Ile Gln His Arg Gln Asn Thr Pro Gln Asp Pro
    370                 375                 380

Ser Ser Ser Asn Asp Tyr Gly Gly Met Thr Arg Ile Ile Pro Ser Asp
385                 390                 395                 400

Val Asn Thr Asp Ala Asp Tyr Trp Leu Leu Thr Glu Gly Asp Val Ser
                405                 410                 415

Ile Thr Asp Met Trp Glu Thr Ala Pro Glu Val Gln Trp Asp Thr Ala
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Thr Ala Ala Leu Asp Leu Thr Gly Val His Ile Leu Glu Ala Ser Ser
            20                  25                  30

gtc ccc ccg ctt ccc gaa cgc ggc ggt aat gcg gtc caa agg aag ggg       144
Val Pro Pro Leu Pro Glu Arg Gly Gly Asn Ala Val Gln Arg Lys Gly
        35                  40                  45

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Trp Gly Leu Arg Glu Tyr Ser Lys Ile Val Cys Glu Asn Val Glu Ala
20 25 30

aaa gga aga aca aca tac aat gag gtt gca gac gaa att tat tca gag 144
Lys Gly Arg Thr Thr Tyr Asn Glu Val Ala Asp Glu Ile Tyr Ser Glu
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Leu Lys Ser
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Val Tyr Asp Ala Phe Asn Val Leu Ile Ala Leu Arg Val Ile Ala Lys

20 25 30

gaa aaa aag gag ata cgg tgg atg ggc ctt tca aat tac aga tat gaa 144
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aaa ata aag aag ctt gag gaa gtt 168
Lys Ile Lys Lys Leu Glu Glu Val
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Lys Ile Lys Lys Leu Glu Glu Val
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1 5 10 15

gaa atc gaa aaa cag ttt gat gat ctc caa aac atc aag tta cgt aac 96
Glu Ile Glu Lys Gln Phe Asp Asp Leu Gln Asn Ile Lys Leu Arg Asn
20 25 30

caa aca ctg gaa agc tca gca gag aat gtt aat ggc atc cgc ctt cca 144
Gln Thr Leu Glu Ser Ser Ala Glu Asn Val Asn Gly Ile Arg Leu Pro
35 40 45

ttc gta ttg gtc aag aca tct agg 168
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Gln Thr Leu Glu Ser Ser Ala Glu Asn Val Asn Gly Ile Arg Leu Pro
35 40 45

Phe Val Leu Val Lys Thr Ser Arg
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ttc gag ttc aat ggt gca cca ttc aca ttg cat gat gat ctc tca atc 96
Phe Glu Phe Asn Gly Ala Pro Phe Thr Leu His Asp Asp Leu Ser Ile
20 25 30

ctt gag ggg gta agg cgt aac agc ata gga aga gct ggc cgc gcc acc 144
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35 40 45

ctt cac 150
Leu His
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1 5 10 15

Phe Glu Phe Asn Gly Ala Pro Phe Thr Leu His Asp Asp Leu Ser Ile
20 25 30

Leu Glu Gly Val Arg Arg Asn Ser Ile Gly Arg Ala Gly Arg Ala Thr
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Leu His
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<221> misc_binding
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